DOCUMENT RESUME

ED 266 723 HE 019 093

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TITLE	Wirral Education Authority F. E. Management Audit Studies: 1983-84. Register Group Sizes and Student Retention Rates. Coombe Lodge Case Study. Information Bank Number 1972.
INSTITUTION	Further Education Staff Coll., Blagdon (England).
PUB DATE	Apr 84
NOTE	27p.
AVAILABLE FROM	Librarian, Further Education Staff College, Coombe Lodge, Blagdon, Bristol BS18 6RG, England.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Academic Persistence; *Class Size; *College Attendance; Databases; Departments; *Enrollment Trends; Foreign Countries; Higher Education; *Management Information Systems; Program Administration; Recordkeeping; Registrars (School); *School Registration; Small Classes; Standards
IDENTIFIERS	*England

ABSTRACT

The management of course registration by Wirral Education Authority in England is discussed, along with the relationship of course size and student retention. After providing background information on the control of course size, standards set by Wirral are specified. Data on initial registrations and attendance levels as measured three or four times during the academic year are assessed starting in 1979. Registration and attendance by field of study are also considered for 1980-1981. For the 1981-1982 academic year, data are shown for groups starting with less than 12 students. In 1982 all further education provision in Wirral were reorganized into a single structure with 11 departments. Analysis of registers for 1982-1983 has provided a departmental record of beginning enrollments as of November 1. In identifying retention levels the fourth from the last meeting of every register is used as the critical benchmark. Retention ratios are calculated using maximum enrollments and the fourth from the last meeting enrollments. Average class sizes for 11 departments are reported for 1982-1983. It is concluded that the review process has strengthened the database by clarifying terms of reference and improving recordkeeping. Personnel and financial implications are discussed. (SW)

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WIRRAL EDUCATION AUTHORITY

F.E. MANAGEMENT AUDIT STUDIES : 1983-84

REGISTER GROUP SIZES AND STUDENT RETENTION RATES

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April 1984

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WIRRAL EDUCATION AUTHORITY

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REGISTER GROUP SIZES AND STUDENT RETENTION RATES

INTRODUCTION

1. The regulation of teaching group sizes provides one of the most immediate and responsive controls open to college management. If applied however in an arbitrary or indiscriminate way its effect can be negative rather than being a key way of raising levels of efficiency and effectiveness. This paper reviews the data available with regard to past practice in Wirral with particular reference to the register-based findings for 1982-83. This is used as a basis for consideration of the combined use of minimum numbers for the teaching groups and average as control mechanisms for future planning.

BACKGROUND

2. The operation of group size mechanisms inter-relates with decisions taken about the patterns of courses, and hence of student enrolments, and of the deployment of academic staff, technicians and space as the major resources allocated directly at the teaching interface. The maintenance of a coherent policy has therefore a significant impact on the outcomes of resourcing decisions which in turn are recognised by the measurement techniques used at college, LEA and national level.

3. The initial decision to support, merge or close a group at its third or fourth meeting hinges upon in-house decisions delegated to college management by the Wirral LEA, subject to subsequent reporting to the Governing Body. Individual group sizes are currently monitored against regulations that set norms for minimum class sizes and detailed grounds for exceptional cases are reported in due course. The overall patterns are subsequently monitored through the Average Class Size ratio computed from the SSR returns to the Pooling Committee (Pooling Committee, 1982).

4. The Pilkington Report (Committee on Technical College Resources, 1966) and the District Audit's Manual of Guidance (Department of the Environment, 1983) highlights the significance of monitoring student retention rates and provide a second type of analysis that relates to the on-going size of classes. Whilst the focus is on individual students the process can also be linked to decay rates with regard to class sizes. The audit check of registers now incorporates the recording of student numbers in regular attendance in or around the fourth week from the end of each course as part of its feedback mechanism. This third perspective again takes a longitudinal view of student participation with particular relation to class sizes in its focus on attendance levels. The use of spot-checks on selected dates as adopted by the Pilkington Committee can fail, however, to discriminate between temporary and permanent absence and whilst this has been argued to be of limited significance it may not always be so. The direct application of Attendance rather than Retention Rates to group sizes in Wirral is operated through the Advisory Teaching Staff Establishment Formula where notional values are set as averages for each Burnham level of work across the College (Kedney, 1983). Class sizes at the start of the academic period can therefore be reviewed as the year progresses in relation to both attendance and/or student losses.

5. Whilst three dimensions have been outlined above in relation to the monitoring of class sizes the second and the third currently tend in practice to be more descriptive and informative than prescriptive in that they comment on the process through the academic year rather than relate directly to management decisions which focus upon the control of class sizes at the commencement of programmes. Nevertheless it has been stated that the Pilkington argument of taking account of subsequent loss rates in initial class sizes is accounted for in general terms in fixing the initial minimum sizes. The Average Class Size ratio makes no requirement of taking account of subsequent retention levels but the District Audit's Retention and Attendance Rates, the Authority's Advisory Formula and, perhaps most significantly in the current perceptions of many colleges, the Burnham points calculations do so with regard to part-time students (DES, 1983).

6. It is not often common practice to establish maxima for class sizes but the operation of averaging as a general principle can be seen to encourage the promotion of large groups wherever possible. In doing so however it runs counter to past practice of splitting groups, sometimes to ensure full-time tables, at other times to support requests for additional staff and may therefore represent a major change in some areas of work. It can be no more than a subject for debate at this stage but there are clearly alternative strategies open to colleges to combat student wastage rates. The traditional technique is one of enrolling as many as possible with an assumed level of loss and it may be axiomatic that expectations, tradition and excessive class sizes lead to a self-fulfilling prophecy. An alternative may lie through critical analysis of past patterns of loss, of establishing guidelines for maxima on monitoring through the year to maintain levels through lower levels of drop-out in order to achieve the same participation rate. The latter approach may also serve as a basis for the incremental lifting of maxima in the light of experience and practice, thus raising the average class sizes.

BASELINES

7. The recording of teaching group sizes and their relationship to such associated measures as resource inputs, examination passes, Student Retention and Attendance Rates and Average Class Sizes requires some definition of the terms of reference and consideration of the reliability of the data. The concept of class size is apparently simple and readily recognisable to the layman, the recording mechanisms of colleges however are often designed to serve a range of other purposes and a degree of opaqueness occurs when existing statistics gathered from other uses are applied to measure actual practice. Some endeavour is made in this paper to identify, wherever possible, the type of findings being used and to draw attention to their characteristics. The bringing together of such findings from the last four or five years is intended to give a general feel of practice rather than any degree of precision that may be suggested by the use here of one decimal place.

8. Fundamental to all aspects of review is a definition of when does a student actually become recognised as such and thus form the baseline for subsequent analysis. College practice reports the use of temporary registers up to the third or fourth week when decisions are taken as to resource commitments. The opening of permanent registers can therefore be generally taken as signalling the critical baseline and shadow or

phantom enrolments by students who complete enrolment cards and never attend or come for only one or two meetings are presumably thus eliminated. Analysis suggests that whilst registers are increasingly following this procedure notable exceptions are still found where class sizes are still apparently inflated by the inclusion of initial losses thus distorting subsequent analysis to a greater or lesser degree.

9. The District Audit practice of adopting the 1st November as the initial review date falls in line with the FESR but is out of step to some degree with college procedures. The practice of adopting enrolments at the first class meeting for courses starting after the beginning of November only serves to increase the differences. A measure of the potential significance has been taken for the first time with regard to 1982-83 enrolments in that enrolment levels from the first to fourth meeting and the losses of students before the 1st November have been recorded. The findings outlined below suggest that the levels of difference may be of some significance.

Table One : Initial Changes in Register Entries

Department	Leavers before 1/11	%	1st Meeting	4th Meeting
Adult Education	428	10%	9,378	9,989
Art and Design	8	1%	649	672
Building	17	2%	832	966
Business Studies	230	9%	2,835	2,993
Electrical Engineering	84	5%	1,802	1,922
Engineering	175	6%	3,876	4,061
General Education	683	14%	4,618	5,052
Health & Fashion	35	5%	805	824
Hotel, Catering	21	4%	561	602
Science & Maths	137	14%	1,789	1,589
Vocational Preparation	215	33%*	964	1,013
WMC	2,033	10%	28,109	29,683

*Including continuing roll-on, roll-off programmes.

10. The loss of 10 per cent of the college's early register entries cannot be directly equated to student numbers as one student may appear on several subject registers but the statistics provide a broad feeling of change. The position is not however completely negative as some students may have left for such reasons as employment or on the basis of a more informed choice. The full year picture of a net growth of 1,574 additional register entries again illustrates substantive fluidity, but there was clearly also some significant element of loss over that period too. The yardstick adopted here for an enrolment is an entry on a permanent register as this is taken to be the criterion

used by the College in its own decision-making process. It will therefore differ to a greater or lesser degree from that adopted elsewhere and there is a need to be sensitive to possibly significant differences in some areas of college activity.

11. The register analysis points to a continuous process of entry and departure during the year, in part due to the commencement of new courses and in part due to the inflow of late enrolments and the outflow of student losses from existing programmes. The preliminary analysis of the 1982-83 registers shows an overall annual total of register entries at the fourth meeting for all courses of 19,683 whereas the 1st November return was 20,928. Whilst it is not possible to differentiate between new course starts and late enrolments for courses commencing at the start of the academic year an impressionistic view suggests that the latter may not be insignificant. The fall in recorded students from the peak to 25,441 by the fourth meeting from the end of each course also points to a wastage rate of the order of 13 per cent across the College as a whole.

12. The use here of data drawn from past analyses of student attendance registers poses a range of problems of which the definition of student numbers in terms of entry, exist and attendance levels are but one facet. Whilst in the majority of cases attendance registers are maintained in relation to discrete teaching groups there are instances where sub-sets are split for teaching purposes, or course register groups are combined for parts of modular programmes. In such instances the register-based records do not represent teaching groups as operated by the Department and the data-base has again to be regarded with reservations. Perhaps most significant in resource terms however has been the absence of monitoring of relationships between group sizes and duration of the teaching period. It is not therefore currently possible to differentiate between a group of 8 or 9 students taught for one hour per week and one of 2 or 3 taught for six or seven hours. Whilst therefore the operation of minimum class size regulations for individual groups can generally be monitored the associated averaging mechanism can only be reviewed currently at the macro level.

13. The data base requires some measure of clarity of definition and reliability that may not currently be possible if it is to be treated with respect in every detail. Consistency with regard to statement of initial student numbers is clearly critical, as it is the starting point for subsequent measurement. In-year findings raise different problems if the purpose is to relate class sizes in an on-going way to student retention rates rather than to snapshots of attenders on a given date, or a post-hoc measure of attendance over a full academic year. There is clearly a need to scan forwards from the given date to trace temporary absences, rather than student losses. The apparent return for a single period at the end of the academic year after six months of absence may however encourage some questioning of the detailed reliability of some registers. One further area that curtails interpretations is the recognition that attendance registers do not necessarily represent discrete teaching groups or courses though the redesigning of the register has increased the level of compatibility.

HISTORICAL DEVELOPMENT

14. The role of the control of course size enrolments as a monitoring device was advocated by the Pilkington Report in 1966. Its recommendations still serve today as the basis for Advanced Course F.E. 21 approvals and recommendations by the Regional Advisory Council, the only major adaptation being the setting of minimum numbers for individual BTEC modules within a course. The subsequent monitoring by the RAC of low enrolments has not, however, until recently tended to be particularly vigorous where establishments and LEAs have been willing to maintain weak courses. In the non-advanced sector sole responsibility has lain within the individual authorities and whilst some have used the Pilkington standards others, like Wirral and its constituent former LEAs, have had no formal and active policy for the control of courses.

15. Consideration of teaching group size controls in recent years in Wirral would appear to have originated with the financial cuts imposed on colleges in 1976-77. The Academic Board of the then Birkenhead College of Technology proposed and the College adopted an in-house policy of minimum levels of 12 enrolments for workshop type courses and 18 for classroom-based programmes. There is however no evidence as to the rigour, or otherwise, of the application of this rule and attention was not drawn to actual practice until the Senior Administrative Officer of the College undertook a record-keeping exercise of attendance patterns in the first week of each month during 1979-80. The findings were not analysed or published at that time but subsequent review indicated that the position was comparable with that found nationally a decade previously by the Pilkington Committee. Of the sample of 823 registers 10 per cent started with less than 10 students, this rose to over 30 per cent on an attendance court by November and by March 50 classes had 5 or fewer students in attendance during the first week of that month.

16. During the following year Wirral was one of the participant authorities in the pilot study of resource efficiency in F.E. colleges carried out by the Audit Inspectorate. The findings again drew attention to scope for improvement with regard to both initial class sizes and to student retention rates. The then three colleges ranged across the national sample reported for the latter dimension, and included the lowest level of 63 per cent, one near the median of 82 per cent and the third was placed near the then maximum of 91 per cent. In 1980-81 colleges were requested to report on actual class enrolments and retention levels at three selected dates across the academic year to the Further Education SUb-Committee. The exercise focused attention on the role of an Average Class Size Ratio. Whilst the findings were noted by the Committee the colleges gave further consideration to the exercising of their delegated powers of control and reviewed their own regulatory frameworks. Control is still located with college management, subject to reporting during the year to the Governing Body. The Department of Education periodically undertakes post-hoc analyses of the register data in the form of reports such as this and advises the College and the Authority of the outcomes for previous academic years.

THE REGULATORY FRAMEWORK

17. The Further Education Regulations (1975) and DES circular letter 1/80 point to the need to monitor adequate initial enrolments. The only formalised requirement set as a specific LEA regulation in Wirral relates to non-vocational provision where an institutional average of 12 fee-paying students has been set in relation to the calculation of fee charges and hence the base budget. Nevertheless some guidance can be inferred, as was indicated earlier by the use of divisors in the Advisory Teaching Staff Establishment Formula which represent values of average class attendance levels. All three colleges chose to use Burnham gradings as the basis for class size differentials and in 1981-82 the Carlett Park College adopted a minimum for review of 11 enrolments for Category III work, 14 for Category IV and 17 for Category V. The North Wirral College determined that its cut-off points for review should be one enrolment higher for each grade but also designated a series of grounds for exceptions. Evidence as to outcomes will be outlined later in this paper.

18. Following the merger of the former establishments to form the Wirral Metropolitan College new regulations were adopted in 1982 which set the following levels for approval at Head of Department level:

Category III teaching groups : minimum 10 enrolments
Category IV teaching groups : minimum 12 enrolments
Category V teaching groups : minimum 15 enrolments

The following range of exceptional circumstances were also detailed as guidelins for submission for further consideration:

1. Areas of social need, e.g. for handicapped students, or other students suffering some degree of social deprivation which is recognised in the nature of the course offered.

2. Courses for local industry which are specialised and for which students would have to travel very long distances in order to get the required course. For example, shipbuilding, marine engineering, process plant operation.

3. Courses whose maximum numbers are controlled by external agencies, e.g. CITB courses at Category V which the Board limits to a maximum of 12 students.

4. Second, third and fourth year courses which the College feels it has an obligation to see through.

5. Courses where safety factors are such that safety alone determines maximum class sizes.

The Principal's paper to the Governing Body detailing the above practice also identified a range of courses that had been approved, together with the individual reasons. Of the 181 teaching groups identified in Autumn 1982, 35 were in the area of Special or Basic Education and the majority of the balance were either courses in their second or subsequent years where commitments already existed, were modules in viable programmes or were covered by the averaging arrangement for non-vocational adult education.

19. The levels set by the College represent guidelines as a basis for delegation of control to individual Heads of Department. They relate to individual teaching groups rather than courses and are minima rather than averages, though clearly the latter are inter-related. Standards for class size controls clearly have to be related to a mix of other decisions in any evaluation of the overall balance of resource planning and there is clearly significant scope for variation. The Pilkington Report warned, however, that:

> 'What was expressly put forward as a minimum for advanced courses has often become to be regarded as a norm for all courses and in turn set an upper limit to the size of classes.' (Committee on Technical College Resources, 1966).

20. The standards set in Wirral would appear to differ somewhat from the course minima set by the Pilkington Report which are as follows:

> 'the following should be the normal minimum requirements for initial enrolments before a course is approved

(i)	Full-time (including Sandwich) courses	24
(ii)	Part-time day involving a large element of workshop practice	15
(iii)	Other part-time day courses	20

Some further national guidance may also be gleaned from the fees regulations negotiated by the Local Authority. Associations in relation to MSC programmes, TOPs courses for example assume workshop classes of 13 and clerical groups of 17. In the more significant area of YTS work the break-even point for student retention levels is 12.4 but split groups are not funded until the levels of 19 (practical) and 25 (clerical) are exceeded. These levels are based on reported practices in colleges across the country and draw direct relationships between class sizes and resources that may be somewhat obscured in mainstream F.E. The relationships between the college regulations for individual group sizes, the Pilkington norms for course minima of the MSC payment levels that relate to student retention rates can be seen to range across the conceptual differences. How far compensatory balancing is achieved through overall Average Class Sizes is clearly a critical issue in relation to any evaluation of the values set by the College's regulations and their application to actual practice. Superficially the differences in staffing levels are however apparently significant.

21. The inter-action of regulations for class size minima and operational practice with regard to a range of monitoring devices and resource decisions will need to take account of aggregation and balance identified by institutional averaging. The practice of the Authority with regard to the separate identification of full-cost fee courses also needs to be followed and consideration may also usefully be given to the use of the major faculty groupings alongside the Burnham grade classifications. It is possible that incremental drift away from the standards set is a key characteristic as time passes and therefore it is likely that regular monitoring, perhaps annually, will be necessary in order to identify full-year practice, year-on-year. Such a process would also permit review of present outcomes alongside current internal regulations and provide a basis for analysing significant external changes in the resource base in relation to in-house college controls.

22. The processes of establishing standards and reviewing practice can significantly affect the awareness and consciousness at the initial stage but it is possible that inertia may follow and expectations and practice may fall back rather than rise over the year. Detailed evidence as to recent practice is somewhat fragmentary but it does provide a number of perspectives on recent performance levels. The setting of standards needs to take account on the one hand of current practice and on the other of target levels. Both processes require however some clarity of definition if like is to be set alongside like and decisions as to the viability of programmes are to be set in relation to other critical decisions that have to be made in a time of changing resources.

PERFORMANCE LEVELS: 1979-80 TO 1982-83

Academic Year 1979-80

23. As has been indicated the initial work was undertaken by the Senior Administrative Officer of the then North Wirral College of Technology and focused on initial enrolment levels and actual attendance levels thereafter. The report to the Governing Body identified 823 class registers and the count of actual attendances by the first of November showed an absentee/loss level of 30 per cent on total student entries, ranging from 27 per cent on full-time to 41 per cent on Evening registers. The analysis did not however distinguish between temporary and permanent absences. The report also gave a breakdown of the levels and distribution of registers which open with less than 10 students, again in terms of mode of attendance:

Table Two : North Wirral College - Initial Enrolments 1979-80

Mode	No. of Registers	% 10	9	8	7	6	5	4	3	2	1
Full-Time	121	16%	5	4	6	4	-	-	-	-	-
Part-Time Day	513	9%	-	12	14	10	8	-	3	-	-
Evening Only	189	4%	4	2	1	1	-	-	-	-	-
TOTAL	823	10%	9	18	21	15	8	-	3	-	-

24. The selection by the College of groups of less than 10 as the cut-off point was at some variance with its 1976 minimum class size regulations, but these had in any event tended to lapse. The findings did however point to a significant proportion of small groups and, as the Audit Inspectorate survey of the previous year indicated a pattern of decay across the year. By March 1980 this was illustrated by the report that 50 registers recorded class attendances of 5 or less. The work was however at that stage limited to an in-house analysis by one college officer.

Academic Year 1980-81

25. In the Summer Term 1981 colleges were requested to submit findings which provided the basis for a report to the Furhter Education Sub-Committee, thus endeavouring to give an over-view of the position in the LEA. Table Three below summarises the findings:

College	Mode	Students on Registers	No. of Groups	Average Size	Attendance Levels		
					Nov.	Feb.	Apr.
Carlett	Full-Time	1089	71	15.3	94%	89%	84%
N. Wirral		2971	178	16.7	83%	76%	68%
Coll. of Art		259	18	14.4	94%	90%	86%
Carlett	Part-Time	3671	237	15.5	90%	84%	82%
N. Wirral	Day	4583	304	15.1	85%	80%	78%
Coll. of Art		394	32	12.3	94%	98%	98%
Carlett	Evening	825	47	17.6	74%	62%	
N. Wirral		1802	109	16.5	73%	88%	55%
Coll. of Art		494	38	13.0	90%	97%	97%

Register analysis and discussions with college officers indicated that the self-reporting had produced findings based on undefined samples with some degree of variation in the approaches to interpretation. The findings outlined above are therefore perhaps best regarded as providing in-house perspectives of the colleges of initial assessments. They also served however to highlight potential differences in interpretations of approach and findings.

26. The attendance register audit for 1980-81 provided a statement of the number of registers used by each college and the proportions with less than 12 students at the 1st November and on three pre-selected sample dates. Whilst the findings only provide a limited snapshot they do record the overall position across the colleges and give some further indication as to retention patterns.

Table Four : Group Sizes 12 : 1980-81

College	No. of Registers	Nov.	Jan.	Mar.	May
Carlett	1045	20%	25%	28%	24%
N. Wirral	1103	19%	23%	30%	34%
Coll. of Art	257	42%	43%	41%	35%
LEA	2405	517	625	725	708
	100%	21%	26%	30%	29%

The returns given in Tables Three and Four would appear to suggest that the Colleges may have been supporting overall average class sizes which were near to rather than above their own minimum regulations, the characteristic identified previously by Pilkington. The average position, as would be expected, included significant proportions of classes that fell below the minimum class size regulations of the colleges. When account is taken of the practice of maintaining individual course registers for combined teaching groups, most notably at the College of Art and Design, it would appear that 1 in 5 of registers had fallen below the lowest minimum size set for advanced courses only. Furthermore both

tables point to a continuing pattern of absenteeism/student loss, most significantly at the time at the North Wirral College. The apparent rises shown at the College of Art relate to the closure of registers which were not deducted from the baseline, these generally being in the Department of Adult Education.

28. A report to the Governing Body of the North Wirral College in the Autumn Term identified 159 groups that were approved to start with less than 12 students, together with the reasons for their support. The departmental range was from 5 per cent (3 groups) in Business Studies to 44 per cent (75 groups) in Mechanical Engineering. The explanations primarily related to second and subsequent year groups and splitting within courses for specialist options. The spread by mode of attendance was 52 in Full-Time courses, 80 in Part-Time Day and 27 in Evening Only programmes. In all the small groups represented 20 per cent of the College's total teaching groups thus confirming the position outlined above. Examination of actual attendance levels across the College at the beginning of November showed a fall of 21 per cent, part of which was only temporary. The departmental range was however somewhat narrower generally, being from -14 per cent (Building and Electrical Engineering) to - 19 per cent (Catering) with Adult Education (-23 per cent) and General Education (-30 per cent) completing the range across the College.

29. The then three colleges overlapped significantly in terms of their patterns of provision and it is possible to draw ten broad areas across the LEA from the departmental records. In the reorganisation following the college mergers in September 1982 eleven departments were subsequently created with the Fashion courses being separated from Catering and linked to a range of related service industry courses which had previously been placed in other departments. In general terms therefore it is possible to describe the 1980-81 position in areas that relate both to programme areas and to subsequent departmental structures. Table Five below outlines the findings:

Table Five: Small Groups by Programme Area: 1980-81

Programme Area	No. of Registers	Groups 12 Attenders			
		Nov.	Jan.	Mar.	May
Adult Education	814	180	219	261	191
Art & Design	33	9	11	10	9
Building	90	23	24	26	29
Business Studies	215	24	40	41	33
Electrical Engineering	65	7	9	12	12
Engineering	498	131	138	148	158
Food & Fashion	94	15	15	21	16
General Education	374	83	103	128	171
Science & Maths	117	20	26	35	30
Vocational Preparation	105	25	40	43	59
TOTAL	2405	517	625	725	708

30. The pattern of register use varies from department to department, partly in relation to the type of programme and partly due to administrative house-style. In the Department of Art and Design for example the courses were predominantly full-time whereas in Adult Education they were largely single session programmes. In others e.g. Engineering and General Education, single subject registers were used for modules of courses. The figures given above therefore relate only to the single dimension of the individual record and do not take account of the varying resource level demand by tuition hours per week. The position shown at the 1st November points however again to a range of small groups from 11 per cent (Business Studies and Electrical Engineering) to 26 per cent in Engineering.

31. The student attendance registers are used in this report as the primary record for analysis, providing as they do a basis for detailed examination of practice at the commencement and through the academic year. Like any administrative record in F.E. however they are open to varying degrees of accuracy in maintenance and interpretation. Cross-reference to other data sources is needed to provide some measure of reliability. In the Autumn of 1980 accommodation utilisation studies were carried out at the Borough Road and Withens Lane sites of the North Wirral College and at Carlett Park which gave snapshot records of the group sizes seen then in the teaching rooms. At the latter college 27 per cent of the groups had less than 10 in attendance for the week commencing the 7th December whilst the October/November head count surveys at the North Wirral College pointed to site levels of over 50 per cent. The patterns identified from registers in this paper for the 1980-81 academic year are unlikely therefore to have been under-estimates of the scale of small teaching groups.

Academic Year 1981-82

32. The register review undertaken a year later of the pattern at the commencement of the 1981-82 academic year extended the summary to groups starting with less than 12 students on the permanent registers. The table below summarises the findings and points to both a rise in groups below 10 and significant numbers immediately above that level.

Table Six: Initial Enrolments: 1981-82

College	No. of Registers	%<12	11	10	9	8	7	6	5	4	3	2	1
Carlett	999	33%	81	60	48	48	32	20	20	12	4	1	4
N. Wirral	922	29%	65	44	43	32	27	21	17	9	6	3	0
Coll. of Art	147	44%	11	9	3	7	6	2	1	2	6	6	12
TOTAL	2068	32%	157	113	94	87	65	43	38	23	16	10	16

33. It is probable that the very small groups were again combined with others, a characteristic particularly reported by the College of Art. The above does not however represent the full picture across the LEA as the Basic Studies programmes at the Kirklands Annexe of the North Wirral College was organised separately to form Project Wirral. The Project did not operate traditionally structured programmes but rather provided continuous entry opportunities for unemployed young people. It was not therefore possible to define single, initial enrolment levels but rather to define activity at the Project in terms of overall averages, the level for 1981-82 being an Average Class Size of 9.0.

34. The registers for the three main colleges have again been classified in terms of the ten major programme areas, Basic Studies however being smaller in size due to the separation of Project Wirral. Table Seven below details the register findings at the beginning of the year.

Table Seven: Small Groups by Programme Area: Initial Enrolments - 1981-82

Programme Area	No. of Registers	% 12	Register Sizes										
			11	10	9	8	7	6	5	4	3	2	1
Adult Ed.	644	34%	53	47	20	24	22	14	17	13	4	4	1
Art & Design	31	74%	2	-	1	2	2	1	-	2	2	2	9
Building	73	38%	10	5	3	3	1	3	-	-	-	1	-
Business St	200	17%	9	5	10	2	5	-	2	-	-	-	-
Elec.Eng.	63	32%	9	3	6	3	1	1	-	-	-	-	-
Engineering	469	37%	42	20	26	36	20	9	11	4	4	2	-
Food & Fashion	105	24%	3	5	5	1	3	5	2	1	-	-	-
General Ed.	331	24%	17	19	12	11	6	5	4	1	3	-	-
Sci.& Maths	117	44%	8	8	10	5	5	5	1	2	3	-	4
Voc. Prep.	30*	33%	4	1	1	-	-	-	1	-	-	1	2
TOTAL	2063	32%	157	113	94	87	65	43	38	23	16	10	16

* Project Wirral not included.

35. The data detailed above differs from that recorded for the previous year in that it relates to the opening of permanent registers in the third or fourth week rather than the beginning of November. The proportion shown as having less than 12 students is however significantly higher than the comparable level for the previous year. Whilst General Education courses showed some reduction in numbers, and Building was broadly constant all other areas showed increases of varying levels. The five spot-check weeks taken across the academic year for the three colleges also showed the effect of post-enrolment losses identified during the year and pointed to apparent increases.

Table Eight: Group Sizes 12: 1981-82						
College	No. of Registers	1 Nov.	27 Jan.	20 Mar.	10 May	14 July
Carlett	999	26%	30%	34%	36%	33%
N. Wirral	922	22%	29.5%	39%	44%	45%
Coll. of Art	147	46%	56%	61%	62%	66%
LEA	2068	641	672	807	869	848
	100%	31%	32.5%	39%	42%	41%

36. The net effect of additional enrolments had only a marginal effect on the outcome with regard to the initial level of small groups or the pattern across the year as they would appear to be consistently above those recorded for the previous academic year. It is unclear however how far this apparent rise reflects the strengthening in depth of the data base rather than any real increase in the actual level of small teaching groups.

37. Analysis of the starting dates of registers identified almost 400 (i.e. 19 per cent) that commenced after the 1st November. Some were short courses whereas others were long programmes e.g. the block release courses in the Department of Building. The increase in the number of small groups after the 1st November also varied across the ten programme areas, ranging from only 1 per cent in Art and Design and 2.5 per cent in Business Studies through a cluster around 6 and 7 per cent to Building with an increase of a further 13 per cent and Electrical Engineering with a rise of 16.5 per cent. The clear requirement for monitoring group sizes at the beginning of the academic year would therefore also appear to need to be part of an on-going process that takes due account of changes across the academic year.

Academic Year 1982-83

38. The rolling process of annual review has provided some measure of longitudinal study which now covers a three-year period. Experience has however also highlighted needs to adjust aspects of the investigations which in their turn have limited some areas of year-on-year comparison. The data base for 1982-83 has supported a further overview of group sizes at the outset and across an academic year. It has however also given guidance in the more specific definition of some aspects that were felt to be potentially significant whilst experience has pointed to yet further changes.

39. The reorganisation and merger of the three former colleges and the specialist project took place as from September 1982, bringing all F.E. provision in Wirral into a single structure based on eleven departments. The scale and distribution of the activities of the College as identified by the attendance registers is illustrated below:

Table Nine: Attendance Register Entries: 1982-83		
Department	Register Entries	Potential Attendances
Adult Education	11,269	282,558 hrs. (6%)
Art & Design	722	287,867 (6%)
Building	1,086	240,460 (5%)
Business Studies	3,386	753,001 (15%)
Electrical Engineering	2,113	296,078 (6%)
Engineering	4,404	622,294 (12.5%)
General Education	6,146	744,717 (15%)
Health & Fashion	847	512,288 (10%)
Hotel, Catering	629	526,119 (10.5%)
Science	1,978	309,806 (6%)
Vocational Preparation	1,906	375,386 (8%)
COLLEGE	34,486	4,950,404 hrs. (100%)

Registers clearly do not represent individual student enrolments, the table above being limited to entries, some of which were multiple records for students. The potential attendance levels similarly take no account of the level of type of activity. The College had however circa 6,250 Full-Time Equivalent students, and of the order of 10 per cent of work was at the Category III level (6 per cent was poolable); and the remaining 90 per cent was almost equally divided between Categories IV and V.

40. The analysis of the registers for 1982-83 has provided a departmental record of the position at the start of the year in terms of entries at the 1st November. Students who had enrolled and been recorded on permanent registers but who had left by that time were identified separately as were entries made after the FESR's operative date. In terms of the full-year position the data base incorporated the records of the number of entries at the first and fourth meetings on every register, irrespective of when the record was started. Table Ten below summarises these findings:

Table Ten: Registered Enrolment Levels: 1982-83					
Department	F E S R Baseline		Full Year		
	Leavers before 1/11	Register Entries 1/11/82	Starters after 1/11	Entries at 1st Meeting	Entries at 4th Meeting
Adult Education	428	4,270	6,183	9,378	9,989
Art & Design	8	609	80	649	672
Building	17	924	123	832	966
Business Studies	230	2,557	545	2,835	2,998
Electrical Engineering	84	1,612	369	1,802	1,922
Engineering	175	3,057	946	3,876	4,061
General Education	683	4,894	423	4,618	5,052
Health & Fashion	35	780	32	805	824
Hotel, Catering	21	582	22	581	
Science & Maths	137	985	821	1,789	1,589
Vocational Preparation	215	658	951	964	1,013
COLLEGE	2,033	20,928	10,505	25,109	29,683

41. Comparison of the student entries in permanent registers at the fourth week with the first shows a rise of 5.6 per cent, whereas if the entries by every 4th meeting are compared with maximum possible (see Table Nine) the period after the opening of the registers would appear to be more significant in its scale. Whilst the register entries contain multiple records for individual students, particularly those on full-time courses, over two-thirds of the 4,803 subsequent entries related to only three departments (Adult Education, General Education and Vocational Preparation), only one of which was a major provider of full-time programmes. The Department of Vocational Preparation ran a specific series of roll-on, roll-off programmes with continuous entry and exit as a matter of policy. The Department of Adult Education had the highest individual level of post-initial entries, accounting for over a quarter of the College total but it also differed in its enrolment practices by offering to collect fees for non-vocational courses on a termly basis.

42. The definition of student numbers is clearly a critical baseline for any subsequent measurement of performance. Reference has already been made to differences in iterpretation with regard to starting levels. The analysis outlined above suggests that the position is far from being static when reviewed at the overall level of the College. The loss of over 2,000 registered student entries before the 1st November should have excluded the initial review period of three to four weeks when it is generally assumed that losses are not entered on permanent registers. The 4,803 entries made after the opening of permanent registers compensated to some degree for the initial and subsequent drop-out levels experienced by departments but as the table below indicates full-year losses significantly exceeded late enrolments. In identifying retention levels the fourth from last meeting of every register was used as the critical benchmark. It has been related below to maximum enrolments and to the

decision period of the fourth class meeting in calculating two Retention Ratios.

Table Eleven: Retention Ratios: Register Entries 1982-83				
Department	Maximum Entries	4th from last meeting	Max. to 4th last Ratio	4th in to 4th last Ratio
Adult Education	11,269	9,298	83%	93%
Art & Design	722	603	84%	90%
Building	1,086	928	85%	96%
Business Studies	3,386	2,495	74%	83%
Electrical Engineering	2,113	1,715	81%	89%
Engineering	4,404	3,549	81%	87%
General Education	6,146	3,419	56%	68%
Health & Fashion	847	733	87%	89%
Hotel, Catering	629	521	83%	87%
Science & Maths	1,978	1,404	71%	88%
Vocational Preparation	1,906	776	41%	77%
COLLEGE	34,486	25,441	74%	86%

43. Defining when a student enrolment should be defined as forming, or ceasing to be, part of the data base is clearly fundamental to any interpretation of the regulations, or of any evaluation of practice. The Pilkington Report accepted loss rates as being inevitable and argued that:

> 'the likelihood of wastage should be taken into account when a course is considered'. (Committee on Technical College Resources, 1966)

The special nature of much of the work in Vocational Preparation sets it on one side but clearly if current practice is weighted then waste in other departments such as General Education would need to be considered most carefully in any review of starting group sizes.

44. The adoption by the District Auditor of the first week in November clearly makes it a critical review date. Following, as it does, on the prime college review of the fourth week of the new academic year it also provides a convenient basis on which to examine practice near to the start of the College's programmes. Table Twelve below summarises the position indicated for 1982-83:

Table Twelve: Small Groups by Department: November 1982								
Department	No. of Registers	% 12	6-11	5	4	3	2	1
Adult Education	311	35%	97	3	4	1	1	1
Art & Design	78	53%	20	3	2	3	3	10
Building	123	58%	69	-	-	2	-	-
Business Studies	284	17%	30	3	3	3	1	7
Electrical Engineering	141	10%	14	-	-	-	-	-
Engineering	344	36%	112	7	2	1	1	-
General Education	280	15%	41	-	1	1	-	-
Health & Fashion	164	7%	10	-	1	-	1	-
Hotel, Catering	165	4%	3	1	1	2	-	
Science & Maths.	124	36%	37	2	1	1	-	3
Vocational Preparation	52	39%	19	1	-	-	-	-
COLLEGE	2,066	26%	452	20	15	14	7	21

45. The analysis for the 2,884 registers used over the whole year showed the same proportion i.e. 26 per cent, had less than 12 students in regular attendance on and after the fourth meeting as the previous year. Comparison with the findings given in Table Seven shows some measure of improvement in both the total number of small register groups and the proportion with below six names, the latter falling from 5 to 3 per cent.

46. The shift of focus from a series of spot-checks through the academic year to the monitoring of register group sizes at the first, fourth, first week in November and fourth from last meeting limits the year-on-year comparisons. If however the latter is assumed to equate to the May spot-check taken in earlier studies it is possible to compare the first and third term levels as indicated by the proportions of groups with less than 12 entries.

Table Thirteen: Group Sizes 12: 1980-81 to 1982-83		
Academic Year	November	May Registers
1980-81	21%	29%
1981-82	31%	42%
1982-83	26%	38%

47. The 1980-81 review provided a test-bed for subsequent study and cannot therefore be regarded as having the same level of rigour as the subsequent years. Comparison of the Attendance Rates identified for the three years would appear to confirm the view that some measure of progress was achieved in 1982-83 when compared with earlier years.

Table Fourteen: Attendance Rates: 1980-81 to 1982-83

Academic Year	Potential Hours	Absence Level	Attendance Rate
1980-81	5,459,276	- 1,213,445 hrs	77.8%
1981-82	5,059,046	- 985,339 hrs	81%
1982-83	4,950,400	- 996,727 hrs	80%

48. Whilst the college's own regulations follow the principles established by the Pilkington Report and focus on individual class sizes at the commencement of the academic year they differ from the teaching adopted by the Pooling Committee (DES, 1982) and outlined by the FE Staff College as a management strategy (Rogers, 1983). The latter focuses on Average rather than minimum class sizes, thus accepting the valancing principle as being of prime importance. The approach has the added advantage of relating simply and directly to resource levels by linking planned student taught hours to staff inputs, thus taking direct account of course lengths.

49. The two major colleges first made returns to the Pooling Committee in 1979-80. The College of Art and Design also submitted returns in 1980-81 and following amalgamation in September 1982 the sample was again 100 per cent for the last academic year. The initial returns reflected the problems of accuracy experienced elsewhere, a point reinforced by the audit checks carried out in 1981-82. The table below has therefore to be regarded at best as giving only a broad indication as to possible performance levels. For the period from 1979-1980 the returns are combined for the two major colleges and are taken as being representative.

Table Fifteen: Reported Average Class Sizes: 1979-80 to 1982-83

Faculty	Level	1979-80	1980-81	1981-82	1982-83
One	Poolable	c.10.0	c.13.5	c.13.5	14.4
	Non-Poolable	c.15.0	c.12.25	c.14.25	11.4
Two	Poolable	c.13.0	c.15.0	c.18.5	12.3
	Non-Poolable	c.14.0	c.14.25	c.16.5	18.6

It should be noted that audit investigation in 1981-82 identified a significant rise in Average Class Sizes, the figures as shown for 1982-83 have as yet to be verified.

50. One of the characteristics of the review process has been a strengthening of the data base, partly by clarification of the terms of reference and partly by the general improvement in record-keeping. It is likely therefore that the audited overall Average Class Size in Pooling Committee terms of 13.9 for 1982-83 shows some measure of real improvement that is not fully reflected in the above table. The range across the college shows a broad relationship to levels of work, as may be expected given the college's own regulatory framework. Table Sixteen below summarises by grade the Pooling Committee type Average Class Sizes (i.e. with 100 per cent notional attendance), and Average Class Sizes based on actual attendance levels.

Table Sixteen: Class Sizes by Grade of Work: 1982-83

Grade	Notional ACS	Attendance ACS
III	11.1	9.3
IV	13.8	11.4
V	15.0	11.2
COLLEGE	13.9	11.1

51. The averages for the college's eleven departments pose some problems of interpretation, particularly with regard to Art and Design where a substantive number of registers are known to have been kept for mergered teaching groups thus raising the actual Average Class Sizes. The raw data reported below therefore has again to be treated with some measure of caution, providing as it does only a starting point for review.

Table Seventeen: Departmental 'Average Class Sizes': 1982-83

Department	Notional ACS	Attendance ACS
Adult Education	12.4	10.7
Art & Design	7.7	6.9
Building	15.3	13.3
Business Studies	15.8	12.5
Electrical Engineering	13.2	11.9
Engineering	13.2	11.0
General Education	17.1	12.2
Health & Fashion	16.4	13.0
Hotel, Catering	15.6	11.6
Science & Maths.	12.6	10.6
Vocational Preparation	12.2	9.1
COLLEGE	13.9	11.1

52. The data base collected so far as provided a range of perspectives on the actual levels of practice across the Metropolitan College. Each in itself is incomplete and generally unverified in terms of its reliability, it nevertheless provides some pointer as to current practice and ways in which further reviews may be carried out. The Average Class Size for the College's unit of management clearly inter-related with the control of small groups whilst enabling large class sizes to offset smaller ones whilst supporting innovation and decay in retention levels for second and subsequent year groups.

53. The levels set for college regulations, and for the formal support of small classes, needs however to be related directly to resource implications and the known balancing levels of other work if individual class size decisions are not to be taken in isolation. Particular attention will clearly have to be paid to the interaction of the use of minimum group size regulations with target Average Class Sizes. Whilst the former have been set by the College attention is being drawn nationally to the key role to be played by the latter yardstick both as a managerial tool and as a standard for resource planning.

STANDARDS

54. Guidelines and standards have been set both nationally and locally that whilst not being specifically prescriptive nevertheless tend to underpin the resource base made available to the Authority, and hence the College. The most overt example is the setting of Pilkington-based minimum numbers for advanced poolable courses by the Regional Advisory Council. At the other pole in terms of clarity of its implications is the Needs Element calculations of the Rate Support Grant Settlement which assumes rising Student-Staff Ratio levels and hence class sizes. The historical process in Wirral, and nationally, to date has tended to be somewhat disjointed and incremental with pragmatic decisions from time to time which can be limited to two separate though clarly inter-related sets of guidelines of individual minimum and overall average class sizes.

55. The Pilkington Report exemplified the practice of focusing on individual programmes and establishing minimum standards. In so doing it concentrated on courses rather than teaching units. It however endeavoured to take some account of wastage in setting its starting levels. In determining that Full-Time and Sandwich courses should have a minimum of 24 enrolments and Part-Time courses of 15 or 20, Pilkington took account of anticipated loss rates. The report however made it clear that the college practices identified then gave substantial scope for raising levels of efficiency for it stated that:

> 'It is however clear that there is a very considerable reserve of resources which could be more fully utilised without any educational disadvantage ... The main reserve of capacity lies in the very heavy concentration of classes in the 11-15 range.'

This position is likely to be no less true today than it was in the mid-sixties.

56. The Department of Education and Science in its paper on Target Student-Staff Ratios presented to the National Advisory Body, identified class size control as the key resource variable (NAB, 1983). The analysis was limited to advanced poolable work and offered two options, both drawn from current levels of practice as identified by college returns to the Pooling Committee's SSR survey. The first option, described as the mechanistic approach, simply projected what had been reported as current latest practice, whilst the alternative approach proposes differential tightening in the three faculty groups. The table below details the DES recommendations and adopts a similar approach with regard to the published performance levels for non-advanced FE.

Table Eighteen: Target Average Class Sizes

Faculty	Level	Mechanistic App.	Alternative App.
One	Advanced	16.0	15.1
	Non-Advanced	18.0	17.0
Two	Advanced	16.0	16.0
	Non-Advanced	18.0	17.0
Art & Design	Advanced	13.5	13.5
	Non-Advanced	17.0	15.0

57. The Wirral Authority is currently giving consideration to the establishment of target Student-Staff Ratios which will operate alongside the Advisory Teaching Staff Establishment Formula. The former will therefore implicitly carry an Average Class Size measure based on notional attendances whilst the latter has explicit assumptions about actual attendance levels. It should therefore be possible in due course to relate these to the existing college regulations for minimum starting group sizes and to the scale and range of exceptions being approved. Actual Class Sizes can then be linked to the types of measures being used by the LEA in reviewing teaching staff needs. Reference has however already been made to the concern expressed in the Pilkington Report that individual course minima can 'often come to be regarded as the norm for all courses and in turn set an upper limit to the sizes of classes'. In a time when national funding is assuming a year-on-year rise in SSRs any incremental trend will need to be upwards and not downwards. The combination of complementary yardsticks with on-going reviews could provide a safeguard against any such negative drift and relate class sizes to overall performance. The combination of individual class size reviews at the beginning of the year with linked post-hoc study of Average Class Sizes can therefore support Management by Exception approaches within overall resource strategies if the relationships between standards and values are explicit and consistent.

MANPOWER AND FINANCIAL IMPLICATIONS

58. The primary data-base used in this report has been that of the register group and the analysis has not included details of the patterns of the teaching programmes. It is therefore only possible to develop illustrative hypotheses on the basis of a number of assumptions. If for example the duration of the average register is assumed to be 3 hours per week for 36 weeks, and the number of groups with less than 12 were to be reduced by one-third the outcome could be the freeing of the teaching time of up to 30 full-time equivalent lecturers, or the release of around £300,000. Alternatively if the Average Class Size of the College were to be raised from that identified for 1982-83 to the target levels discussed by NAB the increase in resource efficiency would be of the order of 21 per cent, or 50 full-time equivalent staff (c.£650,000).

59. The monitoring of class sizes relates directly to issues of efficiency with regard to manpower deployment, parallel consideration has however also to be given to the educational effectiveness of teaching large groups. Rogers, in reviewing the limited research that is available found the results at best to be equivocal and concluded that:

> 'there is no clear evidence to support the view that large classes are necessarily educationally disadvantageous and, accordingly, such considerations are no grounds for limiting SSRs.' (Rogers, 1982)

60. HMI views of current practice in this country are considered to support such a conclusion, finding high standards in colleges and polytechnics with high levels of Average Class Size. International comparisons have also been drawn with Europe, North American and English-speaking technical education institutions in Asia, and they again are reported to operate with significantly higher group sizes than those found in the UK (Birch, 1982). Whilst it is likely therefore that class sizes are inter-related with levels of effectiveness targets such as those outlined by the National Advisory Body are unlikely to be threatening to standards. Small groups run for such managerial reasons as the capacity of specialist workshops, or for work with handicapped students, need therefore to be offset by averaging elsewhere.

CONCLUSION

61. The focus of this paper has tended to be an issue of efficiency and to be quantative in approach albeit with a range of reservations about reliability and validity. This reflects both the limitations of the currently available data base and an acceptance of the view expressed by Selby-Smith in the following terms:

> 'The questions of what education should be for can never be answered by facts alone, but until we are agreed on the reality of the situation, no proposal need commend assent even if objectives are agreed.' (Selby Smith, 1976)

The absence here of specific consideration of questions of relationship between class size and effectiveness should not be taken as in any way implying any acceptance of lesser value for such dimensions. Links between the size of teaching groups and the quality of individual learning experiences raises a multitude of questions, the dynamics and proportions of which would appear to be little understood at present.

As Rogers and others have indicated subjective judgements and the opinions of individual teachers in favour of small teaching groups in schools are not yet borne out by research in relation to older pupils and students. Indeed in the 16-19 age group recent statistical analyses may be argued to tentatively point towards benefits such as peer-group interation in larger groups. (DES, 1981)

62. The Metropolitan College, in establishing review procedures and setting its current targets has already made progress with regard to raising efficiency levels. It is anticipated that in the current (1983-84) and the next academic year the continuation of the phasing-out of low enrolment courses in their second and subsequent years will make their steps in this direction. The strengthening and growing reliaibility of the college data base is also supporting management decision-making by providing a clearer analysis of specific aspects, and pointing to inter-relationships with other resource-based outcomes.

63. The data-base for the findings outlined in this paper is seriously limited by the continued use of caveats relating to interpretation of the findings. It has however served to highlight aspects of an area where there may be scope for significant further development. The need to inter-relate regulatory frameworks that focus on initial inputs to student retention levels on the one hand, and of individual groups to overall institutional averages on the other have been highlighted. The targets being set by the Authority in its measures need to be correlated in terms of standards. These in turn need to be reflected in the strategies adopted by college level in order to ensure that whilst overall performance levels are sustained the scope for flexibility and innovation is not lost. There is a need therefore to explore the identification of discretionary bands of decision-making which recognise Average Class Size controls at the LEA level and support the delegation of decision-making with regard to the control of individual group sizes.

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